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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,883	07/15/2003	Takashi Fukusho	09792909-5677	7467

26263 7590 09/19/2006

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EXAMINER

YODER III, CHRISS S

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/619,883

Applicant(s)

FUKUSHO ET AL.

Examiner

Chriss S. Yoder, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/161,669.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/161,669, filed on September 29, 1998.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano et al. (US Patent # 5,796,154).
2. In regard to claim 10, note Sano discloses a method of manufacturing a solid-state image pickup device (column 2, lines 26-32) comprising the steps of forming in a surface layer portion of a substrate (column 7, lines 10-11 and figure 2: 12) a light receiving sensor portion for performing photoelectric conversion (column 7, lines 10-15 and figure 2: 11), a charge transfer portion for transferring signal charge read-out from said light receiving sensor portion (column 7, lines 10-12 and figure 2: 10), and forming a transfer electrode through an insulation film substantially just above said charge transfer portion on said substrate (column 7, lines 23-29 and figure 2: 7-8), depositing

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an interlayer film so as to cover said transfer electrode (column 7, lines 29-30 and figure 2: 6), conducting a heat treatment under a predetermined condition to form a recess portion (column 5, lines 29-34), and forming an antireflection film along the upper portion of said recess portion (column 7, lines 40-43 and figure 2: 5), wherein said antireflection film is formed of material having a refractive index which is an intermediate value between the refractive index of an in-layer lens and the refractive index of said interlayer film (column 7, line 30 – column 8, line 22; index of in-layer lens = 1.56, index of interlayer film = 1.47, and index of antireflection film = (between 1.50-1.55)), and wherein said in-layer lens is formed on said antireflection film so that the lens material is filled in said recess portion (column 7, lines 47-52 and figure 2: 2), and then the surface thereof is flattened (figure 2: 2).

3. In regard to claim 11, note Sano discloses a color filter layer is formed above said in-layer lens (column 8, lines 40-45 and figure 2: 4).

4. In regard to claim 12, note Sano discloses that an on-chip lens is formed above said in-layer lens (column 9, lines 1-16 and figure 2: 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (US Patent # 5,796,154) in view of Akio (US Patent # 5,691,548).

6. In regard to claim 13, note Sano discloses a method of manufacturing a solid-state image pickup device, as claimed in claim 10 above. Therefore, it can be seen that the Sano device lacks the use of another antireflection film on said in-layer lens, and forming a color filter layer on the other antireflection film, wherein said antireflection film is formed of material having a refractive index which is an intermediate value between the refractive index of said in-layer lens and the refractive index of said color filter layer. Akio discloses the use of an antireflection film on said in-layer lens (column 10, lines 1-5). Akio teaches that the use of an antireflection film on said in-layer lens is preferred in order to provide good adhesion for adjacent layers (column 10, lines 1-5). Therefore, by combining the use of an antireflection film on said in-layer lens from Akio with the Sano device, a second antireflection film is provided on said in-layer lens, and a color filter layer on the other antireflection film (Sano – figure 2: 4), wherein said antireflection film is formed of material having a refractive index which is an intermediate value between the refractive index of said in-layer lens and the refractive index of said color filter layer (Sano: column 7, line 30 – column 8, line 22; index of in-layer lens = 1.56, index of interlayer film = 1.47, and index of antireflection film = (between 1.50-1.55)). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sano method to include the use of another antireflection film on said in-layer lens, and forming a color filter layer on the other antireflection film (Sano: column 8, lines 40-45 and figure 2: 4), wherein said antireflection film is formed of material having a refractive

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index which is an intermediate value between the refractive index of said in-layer lens and the refractive index of said color filter layer in order to provide good adhesion between adjacent layers, as suggested by Akio.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US005844290A: note the use of an image sensor having microlenses.

US005739548A: note the use of an image sensor having microlenses.

US005654565A: note the use of an image sensor having microlenses.

US005976907A: note the use of an image sensor having microlenses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (571) 272-7323. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CSY  
September 12, 2006



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